



Libby Standard Operating Procedure
Approved for Use at the Libby Superfund Site Only
Passive Collection of Dustfall for Asbestos Analysis (Revision 0)

ADMINISTRATIVE
RECORD

Date: 05/04/05

SOP No. SRC-LIBBY-06

Title: PASSIVE COLLECTION OF DUSTFALL FOR ASBESTOS ANALYSIS

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SYNOPSIS: A standardized method is presented for collecting dustfall samples during site cleanup activities such as soil removal or building demolition. This method provides a sample that is suitable for asbestos analysis using standard techniques.

Received by QA Unit:

APPROVALS:

TEAM MEMBER

SIGNATURE/TITLE

DATE

EPA Region 8

Peggy Churchill, RPM

5/4/05

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WJ Bratten

5/4/05

Revision	Date	Reason
0	05/04/2005	--

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1.0 PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to provide a standardized method for passive collection of dust fallout at indoor and outdoor locations that might be effected by site clean-up activities that release dust into air. This procedure is intended for use by employees of USEPA Region 8 and by contractors and subcontractors supporting USEPA Region 8 projects and tasks for the Remedial Investigation work performed at the Libby, Montana, Superfund site.

2.0 RESPONSIBILITIES

The Field Sampling Team Leader is responsible for ensuring that fallout samples are collected in accord with this SOP and for communicating to the appropriate USEPA Region 8 Remedial Project Manager or Regional Chemist any recommended changes or proposed improvements to the SOP.

3.0 EQUIPMENT

- Filtered, deionized (FDI) water
- Indoor collection device; Weatherproof plastic or glass cylinder, approximately 6 inches in internal diameter and 12 inches in height, with a tight-fitting lid
- Outdoor collection device; similar to indoor device, except with stand and optional windscreen (see Figures 1 and 2 in ASTM D 1739-98)

4.0 METHOD SUMMARY

This method is similar to passive dustfall collection methods used previously for asbestos analysis by Segrave (1990) and Crankshaw et al. (1995, 1999). In brief, a passive collection device is placed at the sampling location for a specified period of time. After collection, the cylinder is sealed with a tight-fitting cap and transferred to the laboratory for sample preparation as described in SOP SRC-LIBBY-07. The method is appropriate for collection of samples both indoors and outdoors.

5.0 SAMPLE COLLECTION

Dustfall samples will be collected using a passive collection device similar to that described in ASTM Method D 1739-98. The following guidelines should be followed:

- The collection cylinder should be about 6 inches in diameter and about 12 inches tall. The high aspect ratio helps minimize the escape of any particle which fall into the collection device.
- The collection cylinder must be thoroughly cleaned prior to use.

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- The number and location of sampling locations (both outdoor and indoor) should be specified in the workplan or QAPP/SAP developed for the project.
- Sampling devices should be put in place at least 2 hours before sampling begins. This will allow time for dissipation of any static charges that may be initially present on the collection cylinder.
- Collection containers should contain about 1 cm (180 mL) of FDI water in the bottom. The purpose of this water is to help ensure that any particles which enter the trap are retained, and to help minimize the potential effects of static charge on airborne asbestos particles.
- All outdoor sampling devices should be firmly attached to a stake driven into the ground. The collection device should be at the height specified in the project plan (usually about 3-4 feet from the ground). The device may be equipped with a wind screen similar to that described in ASTM Method D 1739-98, although this is not required. If needed, a coarse-mesh (e.g., ¼ inch) wire screen may be placed over top of the collection cylinder to prevent bulk debris (e.g., leaves, leaves, sticks, large particles) from falling into the sample.
- Indoor sampling containers should be placed on the main level of the house along the side of the house nearest the clean-up activity, near a window or door if possible, and in an area that minimizes disruption during the collection period.
- Sample collection should begin by removing the lid to the collection cylinder shortly before the project begins, and should extend for about ½-1 hour after the project is ended for the day. If a project occurs on more than 1 day, different samples should be collected each day.
- At the end of the sample collection period, the collection cylinder should be tightly sealed and transported under chain of custody procedures to the on-site laboratory for analysis.

6.0 QUALITY ASSURANCE

Absence of contamination in dustfall samples is assessed by collection and analysis of field blanks. A field blank is prepared by placing a collection device in the field, removing the lid and then immediately replacing the lid. Field blanks should be prepared at a rate specified in the workplan or QAPP/SAP prepared for the project (typically 5%, or a minimum of one per sample batch). Field blanks are submitted blind to the laboratory for analysis in parallel with authentic field samples.

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7.0 DOCUMENTATION

The sample collection team should record all relevant details on sample collection, including type of sample (indoor, outdoor), location of the sampling device (indicate on a scale map), collection start and stop times, weather conditions (wind speed and direction), unique sample number assigned, and any other factors that might influence the reliability of the sample. Attachment 1 is a field sample data sheet to be used for this purpose.

8.0 REFERENCES

American Society for Testing and Materials. 1998 (Reapproved 2004). Standard Test Method for Collection and Measurement of Dustfall (Settleable Particulate Matter). ASTM Method D 1739-98.

Crankshaw O.S., Perkins R.L., and Beard, M.E. 1995. An Evaluation of sampling, sample preparation, and Analysis Techniques for Asbestos in Settled Dust in Commercial and Residential Environments. *EIA Journal*, Winter 1995, pp10-14.

Crankshaw O.S., Perkins R.L., and Beard, M.E. 1999. An Overview of Settled Dust Methods and Their Relative Effectiveness. In: *Advances in Environmental Measurement Methods for Asbestos*. ASTM STP 1342.

Segrave A.M. 1990. In Situ Dust Sampling Protocol. *Asbestos Issues*, August 1990, pp. 42, 44, 70-71.

LIBBY MONTANA FIELD SAMPLE DATA SHEET

ATTACHMENT 1

FIELD DATA SHEET FOR DUSTFALL SAMPLES

LIBBY MONTANA FIELD SAMPLE DATA SHEET

DUSTFALL

Field Logbook No: _____ Page No.: _____ Sampling Date: _____

Address: _____

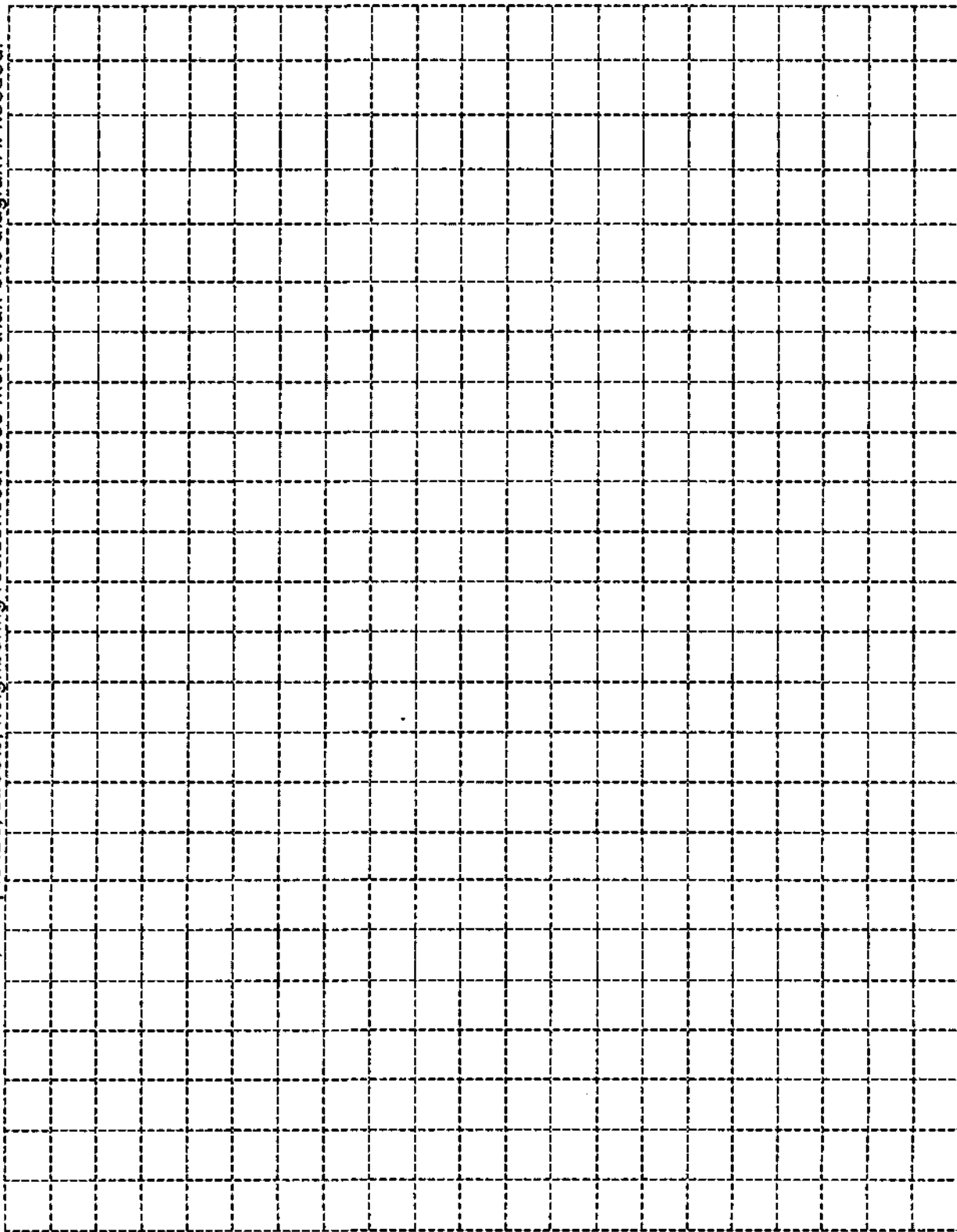
Sampling Team Initials: _____

Data Item	Sample 1		Sample 2		Sample 3		Sample 4		Sample 5	
	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor
Sample ID										
Matrix Type (circle)	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor
GPS Coordinates (outdoor only)										
Location Description (sketch on site map)										
Category (circle)	FS	Blank	FS	Blank	FS	Blank	FS	Blank	FS	Blank
Start Date										
Start Time										
Stop Date										
Stop Time										
Field Comments (Note wind information in table below)										
Wind Meter ID No.										

Use back of this sheet for any additional notes or comments. Provide field sketches on the attached sheet.

FIELD DIAGRAM OF SITE (OUTDOOR SAMPLES)

Include wind direction, sample IDs, streets, neighboring residences. Use more than one diagram if needed.



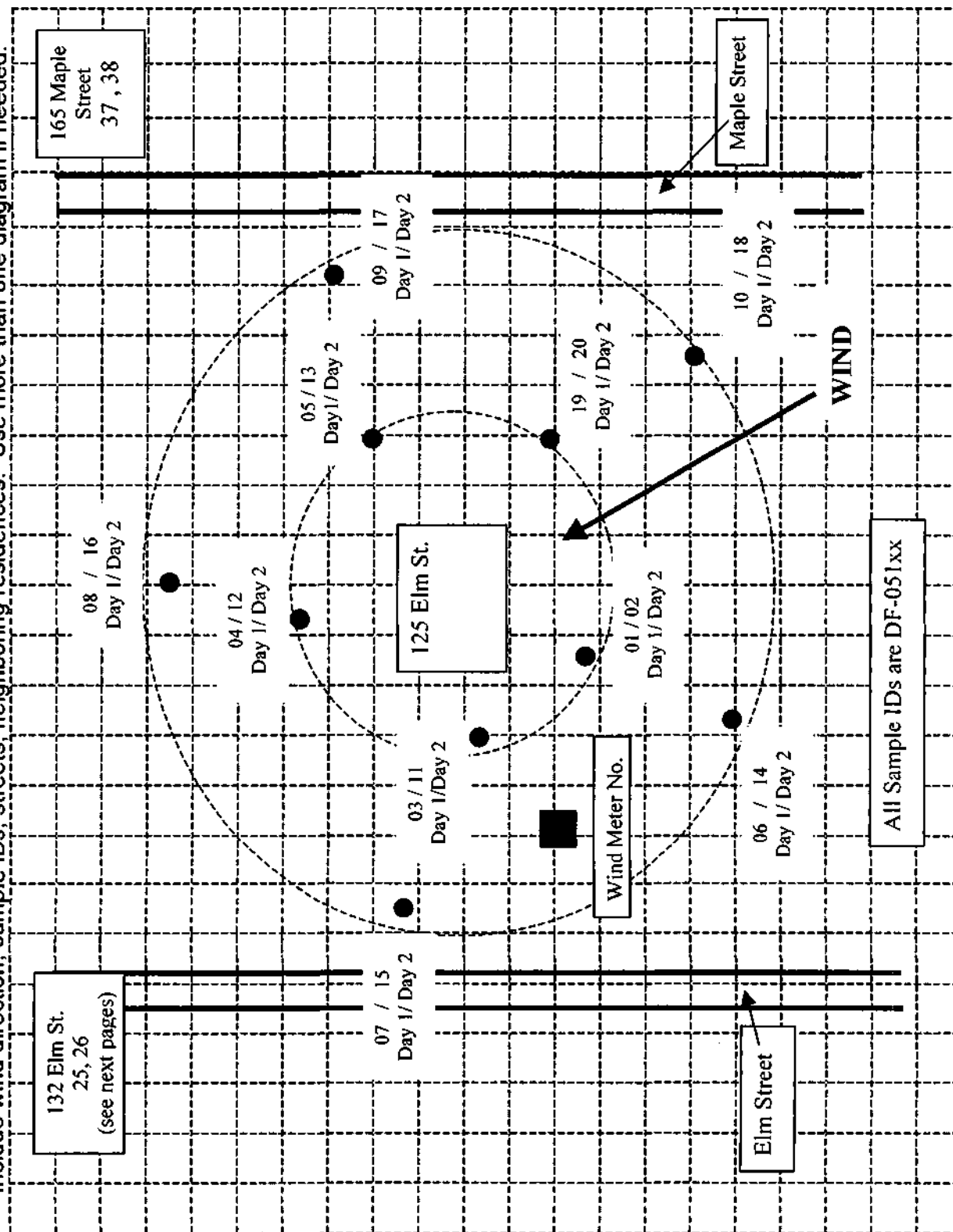
FIELD DIAGRAM OF HOUSE (INDOOR SAMPLES)

Include location in relation to clean-up site, room of house, location in house. Use more than one diagram if needed.

A large rectangular area filled with a grid of dashed lines, intended for drawing a field diagram of a house. The grid consists of 20 columns and 15 rows of squares.

EXAMPLE OF FIELD DIAGRAM OF SITE (OUTDOOR SAMPLES)

Include wind direction, sample IDs, streets, neighboring residences. Use more than one diagram if needed.



EXAMPLE OF FIELD DIAGRAM OF HOUSE (INDOOR SAMPLES)

Include location in relation to clean-up site, room of house, location in house. Use more than one diagram if needed.

